

## CLAIMS

1. A multilayer positive temperature coefficient thermistor comprising a multilayer element main body including a plurality of stacked ceramic layers including a barium titanate semiconductor ceramic exhibiting a positive temperature characteristic of resistance and a plurality of internal electrodes including nickel, the internal electrodes being disposed at the interfaces of the ceramic layers,

wherein the conditions

$$5 \leq X \leq 18; \text{ and}$$

$$4 \leq X \cdot Y \leq 10$$

are satisfied, wherein X is a thickness ( $\mu\text{m}$ ) of each ceramic layer between the internal electrodes and Y is a donor content (%) in the barium titanate semiconductor ceramic in terms of (number of donor atoms/number of Ti atoms)  $\times$  100.

2. A method for designing a multilayer positive temperature coefficient thermistor comprising a multilayer element main body including a plurality of stacked ceramic layers including a barium titanate semiconductor ceramic exhibiting a positive temperature characteristic of resistance and a plurality of internal electrodes including nickel, the internal electrodes being disposed at the interfaces of the ceramic layers, the method comprising the steps of:

determining a thickness X (mm) of each ceramic layer so as to satisfy the condition  $5 \leq X \leq 18$ ; and

determining the donor content  $Y$  (%) in the barium titanate semiconductor ceramic according to the thickness  $X$  so as to satisfy the condition  $4 \leq X \cdot Y \leq 10$ , wherein the donor content  $Y$  is in terms of (number of donor atoms/number of Ti atoms)  $\times 100$ .